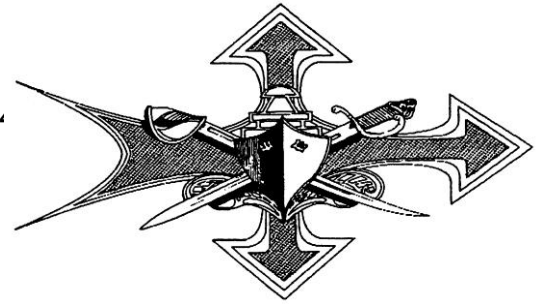


# SHIPS' SAFETY BULLETIN

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**JULY- SEPTEMBER 2011**

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Suggested routing should include CO, XO, department heads, division officers,  
CMC, CPO mess, petty officers' lounge, work-center supervisors, and crew's mess.  
Blanks provided for initials following review:

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## HAZMAT: Not just Supply Department's Responsibility

*By LT Hayley Sims  
Naval Safety Center*

A recent, major afloat mishap revealed that one of the contributing factors was unauthorized hazardous material (HAZMAT) onboard and improper storage of HAZMAT. The Sailors questions revealed that it was common practice to store HAZMAT in unauthorized spaces and that the hazmat admin center onboard was normally not open and available outside of working hours. Both of these practices are not IAW the Navy's policy on procuring, storing, and disposing of HAZMAT.

The hazardous material control and management (HMC&M) standards address policy requirements for the requisitioning, receiving, storage, use, and disposal of all HAZMAT. These requirements can be found in OPNAVINST 5100.19E Volume II Surface Ship Safety Standards (Chapter 23 C2301, C2302). If these requirements are not met, it is possible

that dangers including fire, poisoning in unventilated spaces, asphyxiation, and burns of the skin and eyes will occur. Some important requirements to point out are:

**-Controlling HAZMAT Issue/Re-Issue/Return.** C2303(5) states "Afloat units shall make HAZMAT available to work centers 24 hours a day, and collect previously issued HAZMAT for reuse, alternate use, or offload". It is up to each work center onboard to turn in all HAZMAT that is issued by Supply and not keep it in unauthorized spaces overnight.

**-Requisitioning and Receiving Authorized HAZMAT.** C2302C(1) States "Before ordering any HAZMAT, the ship must determine that a valid requirement exists and determine if the HAZMAT is authorized on the type-ship's hazardous material list (T-SHML). If the HAZMAT is not on the T-SHML, a SHML Feedback Report (SFR) must be submitted and signed by the Commanding Officer. The SFR will be submitted to Naval Inventory Control Point (NAVICP) Code 0772, notifying

the appropriate type commander and procurement department. Ship's personnel are not authorized to purchase any HAZMAT that is not on the T-SHML.

**-Storage of HAZMAT.** Supply department must check all containers of HAZMAT upon receipt to ensure that they contain a manufacturer's label and obtain a material safety data sheet (MSDS) to retain onboard. HAZMAT facilities onboard will be designed and operated to prevent risks to personnel or to the space in which they are stored. HAZMAT will also be stored in containers reserved and configured exclusively for HAZMAT.

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**Naval Safety Supervisor  
NAVEDTRA 14176**

By CDR Mark Hochstetler  
Naval Safety Center

In a previous SSB article regarding safety training, I discussed the requirements for Safety Officers and Divisional Safety Petty Officers to complete the Naval Safety Supervisor Course (NAVEDTRA 14167). During recent shipboard safety surveys we have found that completing this training requirement is not as easy as it should be. Hopefully this article will change that.

Let me reiterate the requirements for completion first. Paragraphs A0203c(13) and A0503a of 5100.19E

require Safety Officers to complete the Afloat Safety Officer course (A-4J-0020) before, or within six months of assignment. Attendance at the SWOS department head course satisfies the requirement for most surface ship Safety Officers. If operations do not permit the prospective collateral duty Safety Officer to attend formal training prior to assuming the position, he/she shall attend formal training at the first opportunity and, in the interim, complete the Naval Safety Supervisor Course NAVEDTRA 141670. OPNAVINST 5100.19e, Paragraph A0503b requires all Divisional Safety Petty Officers aboard ship to complete the Naval Safety Supervisor Course NAVEDTRA 14167 within six months of being assigned.

To complete this training follow these instructions. First, log on to <https://www.courses.netc.navy.mil/Default.aspx>

If this is the first time you have been to this site, on the left hand side you must register as a new user before you can proceed and enroll in the course. Once registered, log on and then go to "Student Services" and click on "Course Registration". Search for 14167F and when it appears, click on register and enroll in the course. Now that you are enrolled, go to "Student Services" and click on "Active Courses", then click on "View / Downloads Course Files". Now you are ready to do the work and then follow the prompt to submit your answers. Make sure you print and save a copy for your training records.

You can find a summary of all shipboard safety training requirements in Appendix A5-A of OPNAVINST 5100.19E.

Reference: OPNAVINST 5100.19E

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## **Can you Escape After the Lights Go Out?**

*By DCC(SW/AW) John Ralston  
Naval Safety Center*

A loss of electrical power on a naval vessel can occur for many reasons. But when that reason is the result of an emergency and the lights go out in your berthing or work space, can you escape after the lights go out?

Section 21.7 of NSTM 079 VOL 2, Damage Control – Practical Damage Control states that the primary purpose of the damage control marking system is to provide rapid emergency egress information and to identify the locations of selected damage control systems and equipment. Photoluminescent and retro-reflective materials are used to enhance damage control and emergency awareness to personnel. Self-adhesive signs, labels, letters and tape are an authorized application means to replace painting applications that are no longer serviceable or effective. The highest priorities are given to egress markings, fixed DC systems, fire stations and portable damage control equipment. The photo luminescent marking system works as negative imagery designed to absorb energy from any nearby ambient light source, such as fluorescent or incandescent lighting. When the light source is removed, the material

immediately emits a light of its own. Maximum luminance is up to one hour, but it remains visible up to eight hours to dark-adapted eyes. Photoluminescent material can be reactivated an unlimited number of times if properly applied. Retro-reflective material stands out when exposed to a shining light. Damage control markings may be retro-reflective, photo luminescent or a combination of both, depending on the marking's purpose. Photoluminescent material may be paint, tape or adhesive labels. Photoluminescent and retro-reflective materials shall not be applied in areas exposed or opening to weather decks, such as the pilot house, gear lockers and light traps. Only NAVSEA-approved Photoluminescent and retro reflective materials are authorized for shipboard use.

Inclined ladders are to be marked by applying photoluminescent strips on the inner frame, alternating sides with each step. The handrails will be marked with six bands wrapped on each side, as shown in [Figure 079-21-4](#). Ladders having folding-leaf ladder chutes installed are to have alternating strips applied to the chute when in the stowed position. Ladders leading to hatches which open to weather decks are to have photoluminescent material applied half the distance from the bottom of the ladder only (to avoid being visible when the hatch is open).

Vertical ladders are to have photoluminescent strips applied to both rails along the entire vertical length, alternating sides with each rung, also shown in [Figure 079-21-4](#). Vertical ladders leading to scuttles that open directly to weather are to be marked only

to midpoint of the ladders' vertical length from the bottom of the ladder. Wrap-around escape trunk ladders will be marked with a band of material wrapped around the ends of alternating rungs.

The side of a hatch coaming where the ladder attaches will be marked with a photoluminescent strip to indicate the location of the coamings, as shown in [Figure 079-21-3](#). Scuttles shall be marked with Photoluminescent strips, also depicted in [Figure 079-21-3](#).

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## **Check Your Fail -safe Thermostats**

*By EMCM(SW) Jim Burke,  
Naval Safety Center*

Fail safe thermostats are safety devices installed in the galley exhaust ventilation, as part of the Gaylord system. These switches are installed in the ventilation exhaust ductwork just above each ventilator hood. When the temperature of the air entering the hood reaches 250°F the system is activated causing the fire damper of the vent hood to close, and shutting the exhaust fan off. This prevents the spread of fire into the exhaust ductwork.

During our safety surveys of ships throughout the Navy, we have noted almost 70% of the fail-safe thermostats are out of calibration, or not calibrated at all. During the last year, the Ventilation Systems, Non-Machinery

Propulsion Spaces MIP (5121/004) changed, and the periodicity for calibration of these switches was changed from A-12 to U-1. The U-1 requires the calibration of this switch to be completed as required by the Calibration Requirements List (CRL)..

I contacted the Philadelphia Shipboard Instrumentation & Systems Calibration Branch of NAVSEASYSCOM and verified that even though the periodicity changed for these thermostats, calibration is still required on an annual basis. Additionally, I have reviewed the CRL for a sampling of ships and have noted that many did not have every installed fail-safe thermostat identified on the CRL.

I recommended every ship verify all of their fail-safe thermostats are calibrated and listed on the ship's CRL. In doing so, this will ensure that your ship's galley is operating safely.

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## **Aerial Work Platform Operations Require ORM**

*By BMCS(SW/AW) Burton Higgins  
Naval Safety Center*

During safety surveys, we routinely see personnel working over the side on ships from AWP (aerial work platforms); or more commonly, JLGs. One look at the area surrounding the operations can reveal whether the ship is complying with the requirements of OPNAVINST 5100.19E, Navy Safety and Occupational Health Program Manual for Forces Afloat, or not. Paragraph C0806 of OPNAVINST

5100.19E contains specific requirements for work to begin with AWP. A few of the requirements are:

The operator of any AWP must be licensed according to local instructions. Those instructions must include the requirements in NAVFAC P-300 and completion of PQS (NAVEDTRA 43127-C) watch station 311.

A "Working Over the Side" chit must be routed through the chain of command and posted on the quarterdeck.

A paint punt must be placed in the water near the lift operations.

All personnel in the basket of the AWP must wear a safety harness and safety lanyard at all times.

All personnel in the basket of the AWP must wear an inherently buoyant life preserver.

You can find safety precautions required for safe AWP operations in paragraph C0806 of OPNAVINST 5100.19E.

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### **Respiratory Protection Program Updates!**

*By HMC Ron Nading,  
Naval Safety Center*

The Respiratory Protection Program, Chapter B6 of OPNAVINST 510019e has had some changes that will make the Respiratory Program Manager job much clearer and easier.

#### ***Here are some highlights:***

-It specifies the program requirements to include appointment and training of the program manager, written

standard operating procedures, medical qualification based on the PHA, and the annual evaluation of the program.

-It deletes the requirement for medical screening exams for respirators. Members with a current PHA (Preventive Health Assessment) with no limitations are qualified to wear any type of respiratory protection. When individual medical readiness is not known, the respiratory user examination in the Medical Matrix should be performed.

-Deletes the requirement for maintaining two types of respirators, but keeps a requirement to have sufficient numbers of models and sizes to fit-test users.

-Allows wearing of contact lens with respiratory protection in contaminated atmospheres.

-Identifies that fit-testing and medical certification for self-contained breathing apparatus (SCBA) use for fire-fighting and other shipboard emergencies is not required as these are military unique operations.

-Clarifies the minimum requirements for documentation of fit-testing results.

-Defines assigned protection factor, maximum use concentrations, and hazard ratio. If you are looking for other highlights, check out the executive summary for the OPNAVINST 5100.19E posted with the document on the Naval Safety Center website at <http://www.safetycenter.navy.mil/instructions/default.htm>

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## **Don't Allow Unhealthy Potable Water Hose Handling to Lead to an Unhealthy Crew**

*By CWO4 Danny L Royse,  
Naval Safety Center*

Your ship has just returned from an arduous underway period and the last thing on your in-port checklist is connecting pier-side potable water to your ship's system. Are your potable water connection accessories IAW NSTM 533? What happens if your ship's potable water system becomes contaminated and a large number of the crew is affected by a waterborne disease? The ship's mission could be degraded because of something as simple as potable water hoses and connectors not being properly maintained. Safety Center surveyors are still finding potable water systems with discrepancies that could lead to potential potable water contamination.

Guidance for proper maintaining of potable water hoses, connections and storage lockers is provided in NSTM 533-2.1.2, 2.1.3, NSTM 505, GSO 532 (C and 671), and NAVMED P 5010-6-8.

Here are some guidelines for potable water contamination prevention.

1. Potable water fill connections and other connections tied into the potable water system i.e. fresh water wash down connections, shall be closed and capped when not in use. The cap must be chained or wired to the station.

2. Potable water receiving station risers and hose connections must be properly color coded and clearly marked in one inch letters "POTABLE WATER ONLY".

3. Potable water hoses shall be labeled "POTABLE WATER USE ONLY" every 10 feet.

4. Potable water deck lockers shall be labeled "POTABLE WATER HOSE STOWAGE ONLY". The locker shall be mounted 18 inches off the deck, be vermin free, and locked at all times. The only authorized items to be stored inside the lockers are potable water hoses and connection pieces; the hoses must be coupled or closed with caps; the connection pieces must be bagged. Step-by-step instructions for disinfecting potable water hoses and risers must be posted in a conspicuous place inside the locker. This locker is not an authorized storage place for hypochlorite.

These check points can be found in Section 2 of NSTM 533 and Chapter 6 of NAVMED P-5010. Pay close attention to all potable water handling evolutions and remember, safety doesn't happen by accident.

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## **Safety Council and Enlisted Safety Committee Meetings, Useful Tool or Ticket Punch?**

*By CDR Mark Hochstetler  
Naval Safety Center*

During shipboard Safety Surveys we routinely note deficiencies in the way ships are conducting Enlisted Safety

Committee Meetings and Safety Council Meetings. In the interest of improved shipboard safety administration, a summary of the requirements for both follows.

Paragraph A0203 h. of OPNAVINST 5100.19E states:

The Safety Council consists of the Commanding Officer (chairperson), safety officer (recorder), Training Officer, all department heads, medical officer/representative, a safety representative from each embarked unit (e.g., Air Wing Safety Officer, Marine expeditionary unit (MEU) safety officer, explosive ordnance disposal (EOD) detachment), and the ship's Command Master or Senior Chief Petty Officer. The Safety Council shall meet at least quarterly and develop agendas and action items based on the afloat unit's scope of operations and hazard or mishap experiences. Safety Council meetings may be held in conjunction with other meetings of similar attendance. Minutes of each meeting shall be recorded (electronic or hard copy) and retained by the Safety Officer, with proof that the Commanding Officer has reviewed and approved the minutes (initials, signature, or electronic record). Specifically, the Safety Council:

- (1) Reviews statistics compiled by the safety officer from mishap, hazard and inspection reports, safety or health related messages, and related reports from the medical representative.
- (2) Establishes mishap prevention goals and plans.
- (3) Establishes program improvement plans based on mishap experience, program

deficiencies and other information.

- (4) Reviews issues and recommendations submitted by the enlisted safety committee.
- (5) Review compliance with operational risk management (ORM) implementation in all applicable operations and evolutions.

Paragraph A0203 i of OPNAVINST 5100.19E states:

Enlisted Safety Committee (not applicable to submarines). The Enlisted Safety Committee consists of the Safety Officer (senior member), Division Safety petty officers, a safety representative from each embarked unit (e.g., aviation safety petty officer or Marine safety specialist), and the Chief Master-at-Arms. If desired, the Enlisted Safety Committee may be incorporated into the Safety Council. The committee meets at least quarterly, and the Safety Officer shall retain minutes of each meeting (electronic or hard copy). The safety officer shall appoint a recorder. The purpose of the committee is to:

- (1) Identify and discuss SOH problems.
- (2) Discuss interdepartmental safety issues.
- (3) Submit issues and recommendations in writing to the safety council by copy of the safety committee minutes.

The ships we visit with the most successful Safety Admin programs ensure the following requirements are met:

- (1) Meetings are held at least quarterly, and records kept as required.



- (2) Required personnel are in attendance or properly represented.
- (3) Required topics are covered and noted in the meeting minutes.

Utilizing these meetings effectively is an excellent way to improve the ship's safety posture and programs at all levels in the chain of command. Ships that look at holding meetings simply as a "check in the box" miss a valuable opportunity to affect improvement in the command's safety posture.

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### **Relief Valves – Friend or Foe?**

*By MMC (SW/AW) Esters Wright  
Naval Safety Center*

Relief valves are designed to protect piping systems and equipment from overpressure damage. These valves allow fluids to be discharge via discharge piping—commonly called tailpipe—to a safe area where there is no danger to personnel or equipment. Is the tailpipe for your relief valve discharge installed, or is it missing?

“What’s the big deal?” you ask. Hopefully, nothing at all—until, that is, a medical emergency gets called away after someone slips and falls, a shipmate gets shocked, or GQ is called away for flooding. All these emergencies are possible when you have relief valve in a space without proper tailpipe or one that is disconnected. You know the kind I’m talking about—the one that gives the impression of a massive leak when it lifts. If the tailpipe is missing, where’s

the safe area? The deck plates angle iron, power panel, electric motor, or it even may be you.

Check your tailpipes and install the missing ones before you or a shipmate become another item in one of the afloat safety monthly mishap summary messages. For more information about tailpipes, Refer to paragraph 505-9.17.3 NSTM 505, Piping Systems

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### **Linseed Oil - Self-heating, Self-combusting!**

*By LT Christine Davy,  
Naval Safety Center*

Although linseed oil is prohibited onboard most Navy ships, it is an excellent polishing and preservative material when applied to bare metal. If you check your ship’s AUL (Authorized User List), it is likely linseed oil is “prohibited.” This fact, of course, does not prevent Sailors from acquiring linseed oil at their local hardware store and bringing it onboard. [After all, they have learned that it saves time and produces a great-looking final product.]

As leaders, we must ensure Sailors know the fire threat linseed oil poses. Here is why it’s so dangerous: Linseed oil is used in oil-based paint and varnishes, and is referred to as a “drying oil.” The drying in this context does not refer to evaporation, but rather polymerization to form a solid material. The polymerization occurs spontaneously in the presence of oxygen,



and releases heat. While this polymerization is desirable in the context of paint and other finishes, it presents a fire threat. Even though the flashpoint of linseed oil is high (222 degrees Celsius or 431.6 F), the heat release from the polymerization makes linseed oil an ignition hazard.

When flammable material (like a rag) is soaked with linseed oil and thermally insulated, but exposed to oxygen, it is possible to have thermal runaway due to the oxidative polymerization of the linseed oil. It eventually will ignite the soaked material. The time for spontaneous ignition is typically a number of hours, and a number of factors promote combustion. They include impurities and previous exposure of the oil to air. Linseed-oil-soaked cotton is a particular problem, as there is a synergistic effect, with the linseed oil not only providing the ignition source, but also chemically promoting combustion of the cotton.

Vegetable oils, such as linseed, are not subject to significant self-heating when present as bulk liquids. However, when spread across a large surface area such as a porous cloth, the linseed oil is now exposed to a great deal of oxidizing air. It is this combination of the oil reacting to the oxygen in the air which allows the drying process to occur. It is this process which generates the heat. Even small quantities (grams or ounces) of linseed oil in laboratory tests have lead to spontaneous ignition of cotton rags, especially when the surface area is reduced to a small volume such as being wadded up in a container or a pile rather than being spread out to dry.

There have been a number of fires due to linseed oil. An example is the Meridian Plaza high rise fire in Philadelphia (1991), which was started by linseed oil-soaked rags left during renovation, and led to three firefighter fatalities. A fire onboard a U.S. Navy ship may have resulted from the spontaneous combustion of linseed oil.

Leaders, tour your spaces daily and ensure your crew is not “stashing” unauthorized hazardous material in your spaces. If you continue to find HAZMAT that isn’t returned to the HAZMINCEN at the end of the workday, it’s probably because the material is not authorized to be onboard! Maintain a vigilant eye, and do not allow your Sailors to bring or store personally-purchased hazmat onboard. This is an inevitable recipe for a disaster!

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## **Unsatisfactory Life Raft PMS Onboard Ship’s**

*By LT Edward Alexander  
Naval Safety Center*

A great Navy day at sea could start out really badly if you are called to the bridge because your ship just lost a life raft. A few of the questions that will be asked by the Chain of Command: Why was the raft lost? Could it have been prevented? Who last performed maintenance on them? And most importantly, how can this be prevented in the future? There may be numerous causes that could be attributed to the loss, but most of them will point to improperly completed or neglected PMS. The MRC contains step-by-step

procedures on how to secure a life raft in its cradle.

During safety surveys, I continue to life raft PMS not been completed correctly:

- Sea painters were not terminated to the ship's structure.
- Rafts were not stowed in racks with the seam of the upper and lower halves positioned approximately parallel to the base line of the ship. In this position, the drain holes will not be at the lowest point of the container and water will not drain from the container.
- Hydrostatic-release devices were installed backwards or upside down.
- Securing harnesses had cracked rubber coatings, and CRES material was not utilized to secure the harnesses properly.
- Incorrect type of lashing was used between hydrostatic-release devices and securing harnesses.
- Lashing on release devices was not properly terminated.

More problems could be listed, but I think you get the picture. Remember that a life raft will take care of you only if you take care of it. Deck Division Officers, LCPOs and the WCS must know what requirements are contained in the MRC, and get out and inspect the ship's life-saving gear. It could save your life.

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## **General Safety Note Corner:**



Where are your "T" wrenches stored? Are they in the proper holder or are they in the fitting? "T" wrenches left in fittings can rust to the fitting seizing it and decreasing your water tight integrity and Damage Control readiness.